



## *Ficus virens* Aiton var. *matthewii* Chantaras: A new distributional record from Kerala

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### ABSTRACT

During the field explorations in the Wayanad District of Kerala, the authors came across an interesting specimen of *Ficus*. On further examination, literature review and herbarium references, it was confirmed as *Ficus virens* Aiton var. *matthewii* Chantaras. This variety is an addition to the floral diversity of Kerala. Detailed description, illustrations and colour plates are provided here along with a comparison with its allied variety.

**Key words:** *Ficus*, Kerala, New distributional record.

## INTRODUCTION

The genus *Ficus* L., is one of the most complex and advanced angiosperms belonging to the family Moraceae (Corner, 1965; Berg and Corner, 2005). They are commonly called figs and are considered as key stone species in many ecosystems supporting diverse flora and fauna (Vanitharani et al., 2009; Kumar et al., 2011). The global diversity of figs accounts for 750 species and 115 taxa has been so far reported from India (Chaudhary et al., 2012). The genus is divided into 6 sub genera *Pharmacosycea*, *Urostigma*, *Ficus*, *Sycidium*, *Sycomorus* and *Synoechia* (Berg, 2003). And the sub genus *Urostigma* being the most dominant among them with around 280 species (Berg, 2004).

*F. virens* Aiton, is a highly variable species belonging to the sub genus *Urostigma* (Chantarasuwan et al., 2013). The present paper deals with a distributional record of *F. virens* var. *matthewii* Chantaras, a new variety distinguished from *F.virens*. The plant was distinguished as a new variety in 2013, based study on the herbarium collections in the National Herbarium Nederland (L). The collection of plant specimen by Mathew from Tamil Nadu, India, in the year 1987 is designated as the holotype of this variety, earlier it was determined as *F. virens* Aiton.

As a part of the field explorations in search of the genus *Ficus* during 2019–2020, authors collected this interesting specimen from Thirunelly, Wayanad District of Kerala state in October 2020. The plant showed much variation from the previously collected specimens. On further literature references (Gamble, 1925; Sasidharan, 2004) and herbarium references in Madras Herbarium (MH), Kerala Forest Research Institute (KFRI), Jawaharlal Nehru Tropical Botanical Garden and Research Institute (TBGT) and Calicut University Herbarium (CALI), it was confirmed as *F. virens* var. *matthewii* Chantaras. With reference to the floral studies in Kerala and herbarium references, hitherto, there is no other authentic collection record of this plant from the state. Hence, present collection is a new addition to the fig diversity of Kerala.

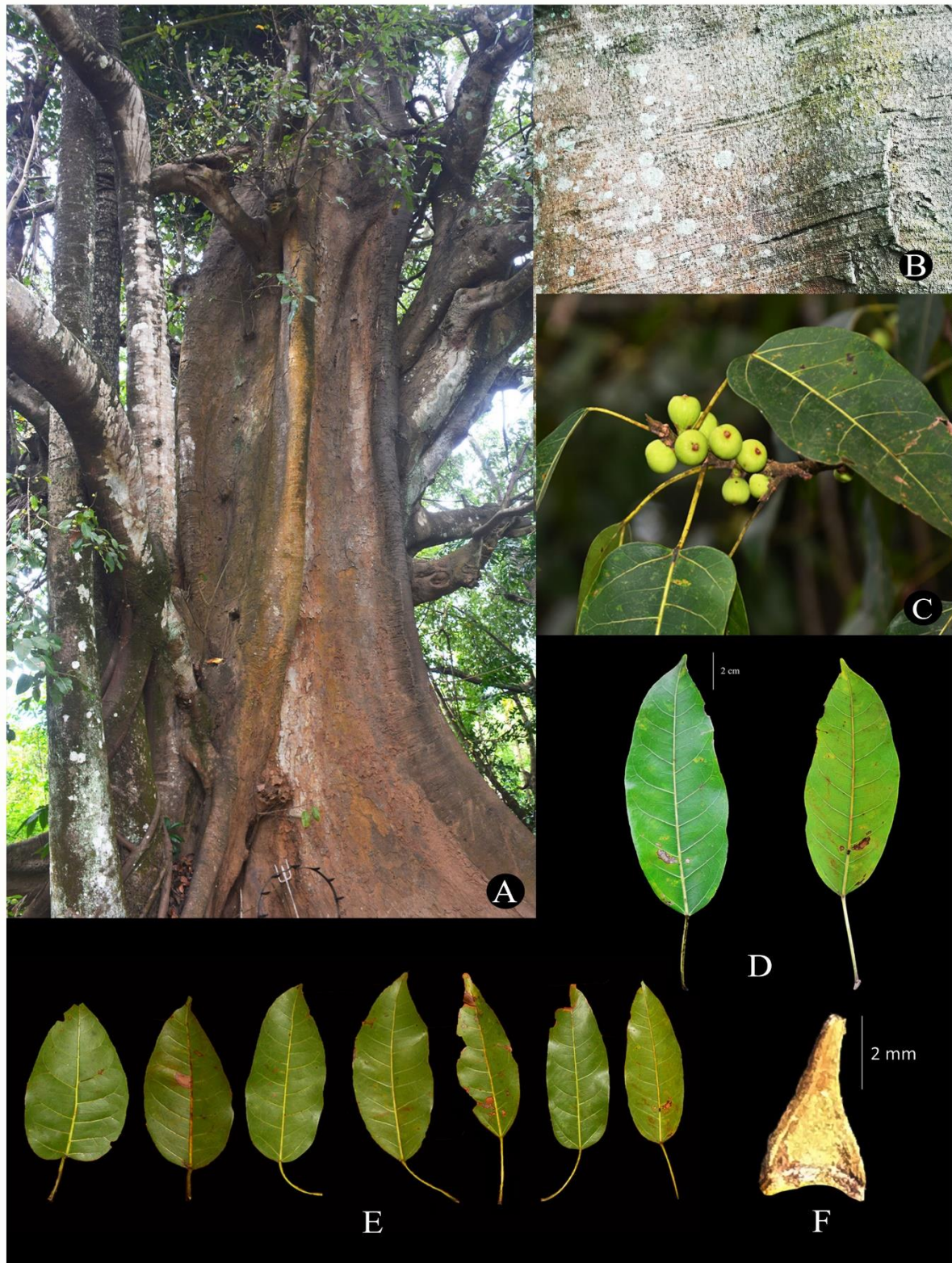
## TAXONOMIC TREATMENT

*Ficus virens* Aiton var. *matthewii* Chantaras., Syst. Bot. 38(3): 683. 2013.

**Type:** India, Tamil Nadu (Madras), Dist.Dindigul, Anna, Pachalur, below village, 1 Nov 1987,K. M. Matthew RHT 50937 (holotype: L; isotypes:RHT, SHC)

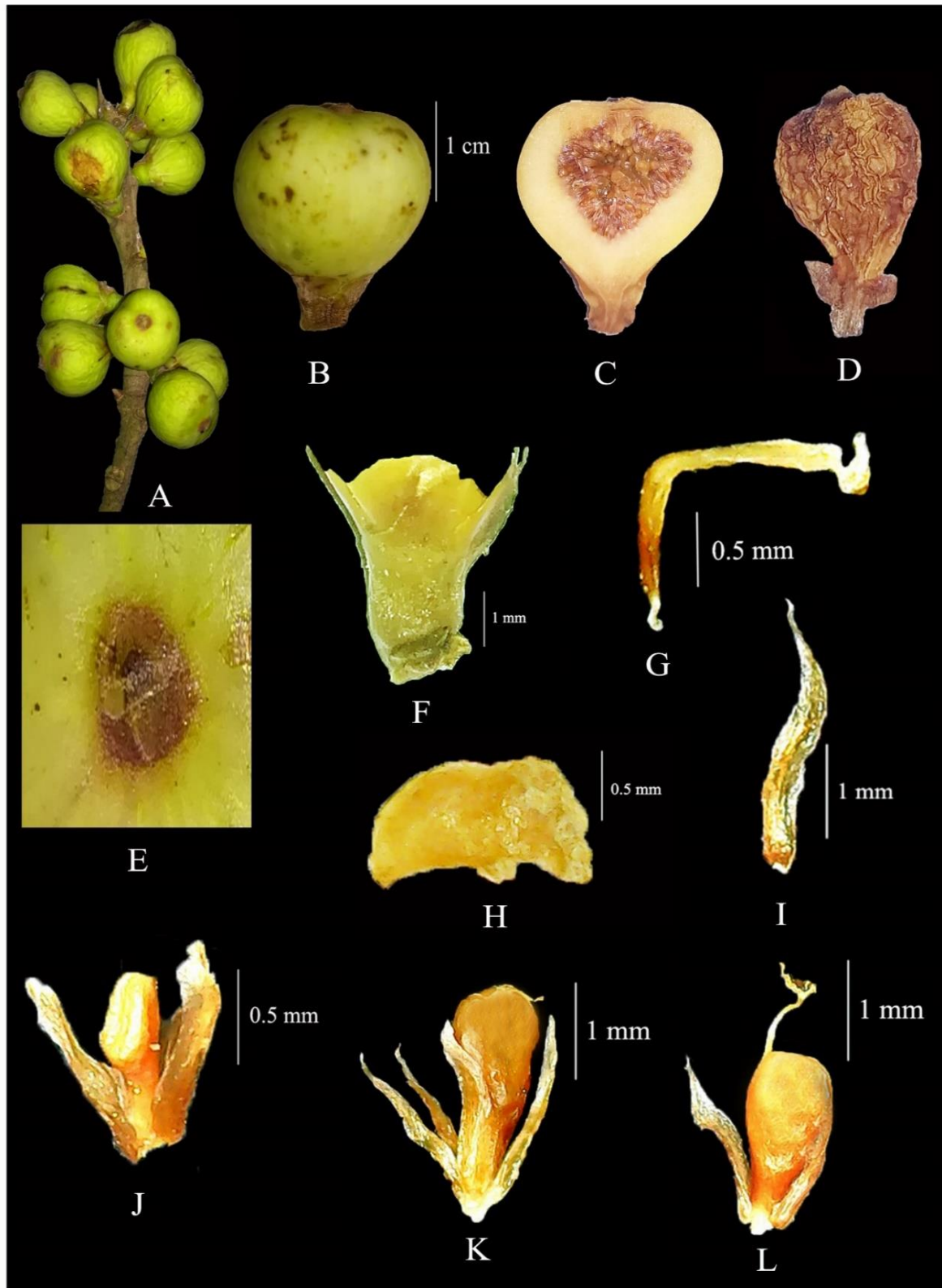
Tree up to 30 m height; aerial roots absent. Bark smooth lenticellate, brown coloured. Young twigs terete, pale brown, glabrous. Inner node 0.6–4.0 cm. Stipules triangular – widely triangular, margins entire, 0.7–1.5 x 0.6–1.2 cm, apex acute, base truncate, hairy, tomentose, pale brown. Petiole terete, 1.5–11.2 cm, glabrous, pale green. Leaves alternate, lanceolate -elliptic - lance ovate - ovate, margins entire, 5.8–20.5 x 3.1–7.2 cm, acumen 0.4–0.9 cm, apex acute – acuminate - obtuse, base attenuate – cuneate – obtuse – rounded - truncate, glabrous, green on abaxial, dark green on adaxial, subcoriaceous, brochidodromous venation, lateral veins 10–12 pairs. Receptacles axillary or below the leaves, clustered, monoecious, pedunculate, internal hairs present. Peduncle 0.2–0.3 cm, glabrous, pale green. Basal bracts present, 3, fused at the base, 0.3–0.5 cm, puberulous. Syconium 0.4–2.2 cm across, obovoid, glabrous, pale green to purple coloured. Ostiole 0.3–0.4 cm, outer bracts present, free, reniform, 0.2 cm, puberulous, pale brown. Inner bracts present, free, linear, 1.2 mm, glabrous, pale brown. Male flowers few near the ostiole, 1.0–1.1mm long, pedicel short or sessile, tepals, 3–4, fused, 1 mm, linear, glabrous, pale brown coloured, stamen 1, 0.9 mm long. Female flowers at the base, 3 mm long, sessile, tepals 3, fused, 1.5 mm, linear, stigma 0.4 mm, ovary 2 mm, obovoid, glabrous, pale brown coloured. Gall flowers 2.5 mm, tepals 4, fused, 2 mm, linear, stigma 0.2 mm, ovary 1 mm, obovoid, glabrous, pale brown (Fig 1, 2& 3).



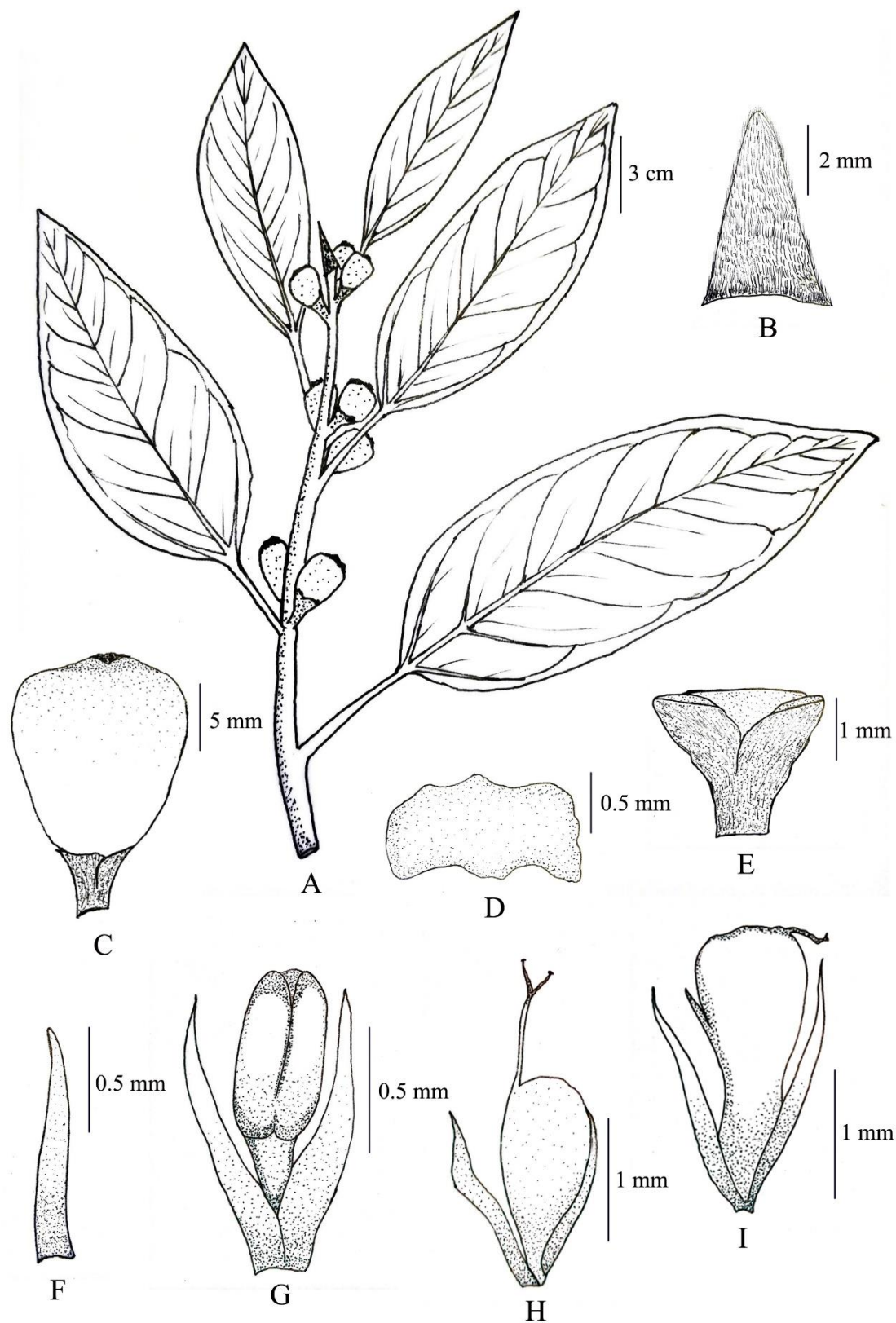


**Fig 1:** *F. virens* var. *matthewii* Chantaras. **A.** Habit; **B.** Bark; **C.** Twig; **D.** Leaf; **E.** Variations in leaf lamina from the same twig; **F.** Stipule.





**Fig 2:** *F. virens* var. *matthewii* Chantaras. **A.** Receptacles; **B.** Syconium; **C.** Syconium L S; **D.** Syconium dried; **E.** Ostiole; **F.** Basal bracts; **G.** Ostiolar inner bract; **H.** Ostiolar outer bract; **I.** Tepal; **J.** Male flower; **K.** Gall flower; **L.** Female flower.



**Fig 3:** *F. virens* var. *matthewii* Chantaras. **A.** Habit; **B.** Stipule; **C.** Syconium; **D.** Ostiolar outer bract; **E.** Basal bracts; **F.** Tepal; **G.** Male flower; **H.** Female flower; **I.** Gall flower.

**Etymology:** The term 'virens' refers to the green nature of the leaves. The variety is named 'Matthewii' in honour of the contributions by Dr. K M Matthew in the field of plant taxonomy, also who collected the specimen for the first time in 1987.

**Habitat:** In evergreen forests.

**Flowering and fruiting:** October – December.

**Distribution:** South India and Sri Lanka.

**Leaf morphology:** The plant shows remarkable variations in the leaf morphology (Chantarasuwan et al., 2013), even in leaves of the same branch (Fig 4). Variations were observed in the length of the petiole, shape and size of the lamina, apex, base and length of the acumens (Table 1). The characters including leaf arrangement, venation pattern, nature of indumentums and number of lateral veins remain consistent in the species.

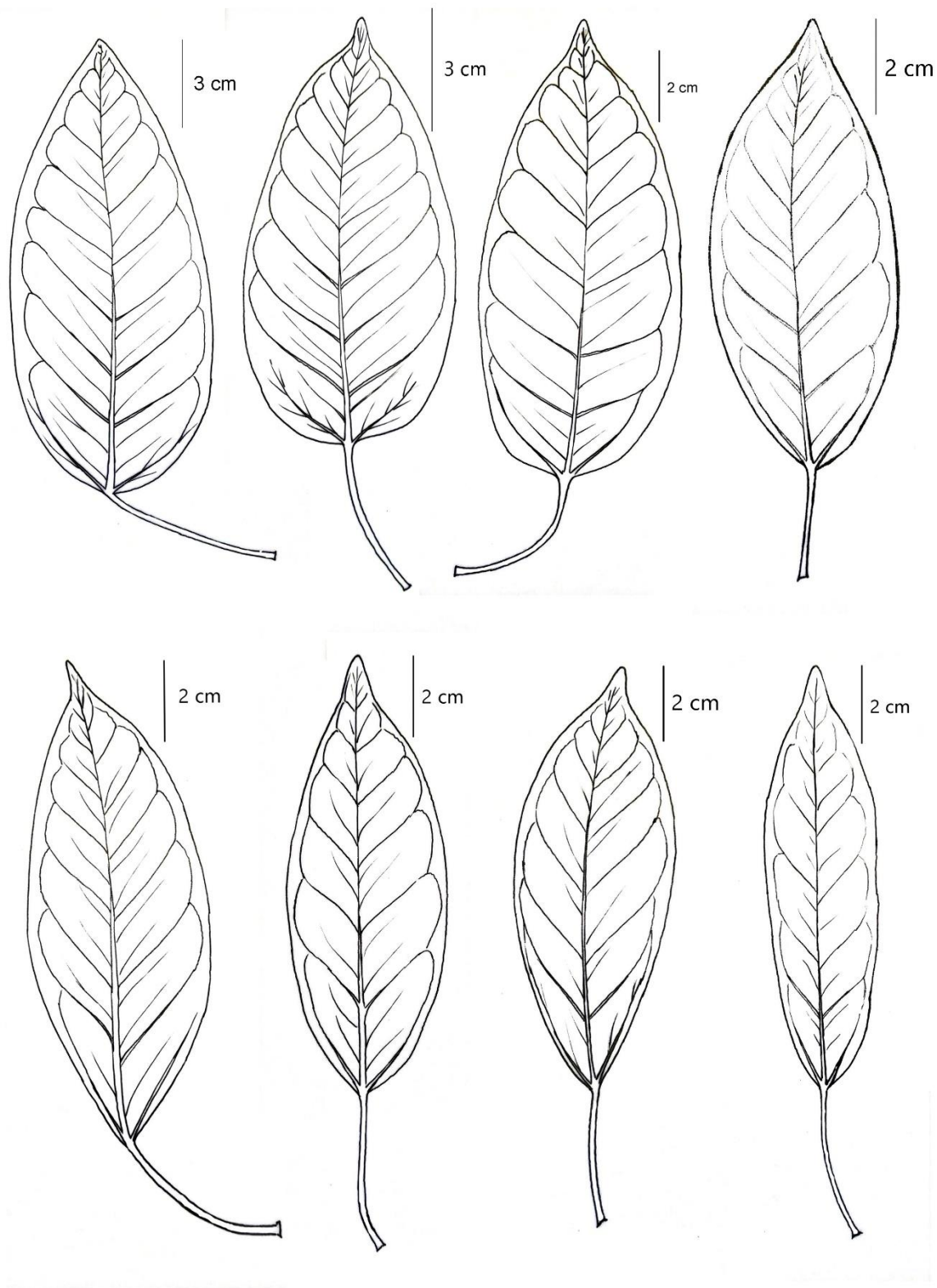
**Table 1:** Leaf morphological variations in *F. virens* var *matthewii*

Characters	Variations
Length of petiole	1.5–11.2 cm
Shape	Lanceolate -elliptic - lance ovate - ovate
Size	5.8–20.5 x 3.1–7.2 cm
Apex	Acute – acuminate - obtuse
Base	Attenuate – cuneate – obtuse – rounded - truncate

**Comparison and distinguishing characters:** The plant shows similarity with *F. virens* var *virens*. Syconium of *F. virens* var *matthewii* are much larger compared to all other varieties of *F. virens* (Table 2).

**Table 2:** Comparison of distinguishing characters of *F. virens* var *virens* and *F. virens* var *matthewii*

Characters	<i>F. virens</i> var <i>virens</i>	<i>F. virens</i> var <i>matthewii</i>
Basal lateral veins	Branched	Unbranched
Size of basal bracts	1.5–3 mm	3–4 mm
Indumentum of basal bracts	minutely puberulous	puberulous
Size of stipules	1.5–3 mm	1.1–1.5 cm
Indumentum of stipules	puberulous	tomentose
Syconium	0.4–0.9 cm when dry	1.2–1.5 cm when dry
Ostiole	0.4–0.9 mm across	3.5–4 mm across



**Fig 4:** *F. virens* var. *matthewii* Chantaras. Variations in leaf morphology.

**Species examined:** Tamil Nadu, (Madras): Dindigul, Pachalur, 01-11-1987, Matthew RHT 50937 (L). *F. virens* Aiton: Tamil Nadu, Coimbatore, Girimalami, 18-03-1931, K. Cherian Jacob, 421(MH); Kerala, Kollam, Vilakkumaram, Shenduruny WLS, 09-12-1993,



Sasidharan, 10687; Idukki, 1101 m, 16-05-1994, N. Sasidharan & Jomy Augustine, 13740 (KFRI); Thiruvananthapuram, Peringammala, 19-06-1984, N. Mohanan, 174 (TBGT); Wayanad, Vythiri, 900 m, 15-05-2000, Rathesh Narayanan, 2547 (CALI).

**Note:** The establishment of this variety in 2013, was based on the studies of some specimens deposited in the herbarium L, by the collections of K M Matthew. Some other collections in 1980 from Kerala in the same herbarium shows similarities with this new variety. This ensures the distribution of this variety in South India. As the previous studies were based on herbarium collections, the present study in addition to the new distribution record of this variety to Kerala, is the first authentic paper supplemented with descriptions and colour plates on this variety.

**Supplementary material:** <https://bioportal.naturalis.nl/specimen/L%20%200736226>

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**Author's Contribution:** All authors contributed equally.

**Conflict of Interest:** The authors declare that there are no conflicts of interests.

### Ethical approval

The ethical guidelines for plants & plant materials are followed in the study for sample collection & identification.

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**Peer-review:** External peer-review was done through double-blind method.

### Data and materials availability

All data associated with this study are present in the paper.

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